

EXPANDING THE NOTION OF TEACHERS' RIGHTS: ACCESS TO TOOLS THAT WORK

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Educational reform puts teachers in an awkward position. In most schools, resources are shrinking as the student body becomes more diverse and challenging. Yet if teachers advocate too loudly for additional resources or more support for education from the home, they are criticized for making excuses rather than solving problems, as a member of the Oregon Board of Education did. The board member insisted that educators must respond to a public "that wants to see us do business in a different way" (Wright, 1991, p. 4B).

The columnist James Kilpatrick (1991) typified this conventional critique of education—deteriorating performance accompanied by lame excuses:

The SAT Scores for 1991 came out a few days ago, and what do you know: The verbal scores of high school seniors hit an all-time low. Scores on the mathematics part of the exam declined for the first time since 1980. The response from the educational establishment was predictable: same song, umpteenth verse. (p. 13A)

Kilpatrick also blamed the typical culprits:

Looking at these miserable results, some educators were honest enough to lay the blame squarely where it belongs—upon the teachers, principals and administrators of the public school system, and also upon the permissive parents of a generation gone morally and intellectually soft. (p. 13A)

These criticisms from the public do not imply that teachers should eschew crucial issues such as resource availability and family support for education. Rather, teachers must be at least equally vocal about providing the best professional services possible under these difficult circumstances. Such a proactive position could counteract the scapegoating of teachers that is all too common.

Such a proactive stance has many possible starting points. For example, hallmarks of other professions are their knowledge base and effective tools. In these professions, the tools have been extensively tested—prescription drugs, computer-aided design programs, electronic magnetic imaging machines, and so forth. Ironically, in education it is the clients—students—who are extensively tested, maybe 10 full days in 1 school year. In contrast, the educational tools themselves (e.g., textbooks, computer programs, and so forth) are usually untested, as is illustrated later in this essay. Teachers deserve the same protection as members of other professions—access to tools that have been carefully evaluated to ascertain their effectiveness.

Just like that of any other professional, teachers' efficacy is dependent on the tools at their disposal. Unfortunately, the educational establishment does not exhibit the characteristics of other professions. Whereas medicine and engineering are characterized by a scientific perspective, education is characterized by dogma and current fads. Rather than relying on a growing body of scientific knowledge based on carefully implemented research to construct tools, education typically relies on consensus. A scientific knowledge base to give the practitioner expertise and confidence is lacking. It is instructive, for example, to contrast education with medicine. Initially, the income of a doctor was determined by salesmanship or bedside manner. It was patient-centered medicine; a client-centered occupation.

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According to the dogma of the time, the doctor asked the patient what he or she thought would be a good remedy! When a practitioner doesn't have an agreed-upon body of knowledge for solving problems, the practitioner defers to the client.

One of the revolutionaries who ushered in modern medicine did so by moving from dogma to science. Several hundred years ago, the standard treatment for battle wounds was boiling oil. During one battle, the French physician Paré ran out of boiling oil. To the rest of his patients, he administered salve. This was not remarkable. What set him apart from his colleagues and their dogma was what he did next. He did not accept the consensus of the experts. He actually went to visit his patients to see if there were differential effects with boiling oil versus salve (Haggard, 1929). The evaluation of different approaches helped medicine on the road to science.

Dogma leads educators in circles. Let's look at math, for example. From 1900 to 1935, the focus was on skills for solving problems of everyday life. This emphasis was faulted later for being too narrow. Thus from 1935 to 1958, meaningful arithmetic and problem solving characterized by experimentation and discovery (now called constructivism) came to the forefront. Next came the "new math," with a new content focus but a continued emphasis on discovery (constructivism). "The primary emphasis [of new math]," said Irving Cowle, "is on insight and comprehension, *not* meaningless manipulation and reciting by rote. We want thinking, reasoning, and understanding, rather than mechanical responses to standard situations" (1974, p. 71). However, critics such as journalist Richard Martin (1973, cited in Rappaport, 1976) pointed out that, "There is one slight hitch: many of these kids can't add, subtract, multiply or divide" (p. 564).

The reaction was a "back-to-basics" movement. Now "back to basics" is passe, replaced by a return to discovery (constructivism) in the new standards of the National Council of Teachers of Mathematics. Such cycles characterize many social movements (e.g., temperance movements in the U.S. have occurred in the mid-1800s, in the late 1800s

through the early 1900s, and most recently beginning in 1979). When cycles dominate an occupation such as education, however, dogma prevails and true professionalization is impossible to achieve.

Dogma is particularly counterproductive in the context of the changing demographics of American public schools: More children than ever before are poor, are of different races, come from fractured families, receive special education services, and speak different languages. In contrast to this acceleration in student diversity, educational leaders continue to promote the faddish "best methods" that have gained popularity and are recommended for all students and, in many school districts, mandated without any prior knowledge of relative effectiveness. Reyes (1991) referred to this as a "one size fits all" mentality. For example, the National Council of Teachers of Mathematics (NCTM) (1989), in its new teaching standards, insisted that its "progressive" teaching method applies to all students.

Several examples of dogma come from the NCTM standards. The suggestions for the content students should learn in mathematics represent a broad consensus of math educators. However, arriving at a consensus is not necessarily an appropriate way to determine the practices leading to learning that content. Committees cannot dictate the laws of learning. Research is needed to determine what practices are effective.

Near the beginning of the NCTM standards, the authors imply that they have used research to determine effectiveness. They stated they were protecting the American public from shoddy practices, just as the Food and Drug Administration does. The standards include provisions that specify the best method for instruction. Was that method based on scientific research in which the method is field-tested with students? This statement from the same document answers that question: It "suggested the establishment of some pilot school mathematics program based on these standards to demonstrate that all students—including women and underserved minorities—can reach a satisfactory level of mathematics achievement" (NCTM, 1989, p. 253). Obviously, the procedures had not been rig-

orously tested, yet these recommendations are now being implemented in many school districts across the country. Can you imagine the Food and Drug Administration approving a drug and mentioning that it would be a good idea to try it out at some later time to show how wonderful it is?

As the authors of the NCTM standards admitted, their recommendations had, in fact, never been systematically tested in any school. As an afterthought, they suggested the idea of trying out the recommendations. The suggestion eventually took hold. The following quote is from the May 1991 *News Bulletin* published by NCTM:

Forty-eight participants at an NCTM Research Catalyst Conference held 8–10 March have *begun* studies in six focus areas related to the *Curriculum and Evaluation Standards for School Mathematics*. (p. 3, emphasis added)

Another example of a dogmatic approach involves the NCTM's insistence on manipulatives. A videodisc fractions program that the U.S. Department of Education's Program Effectiveness Panel had certified as being exemplary in its effects on students' learning did not feature manipulatives, because it was video based. A mathematics curriculum specialist working from the NCTM standards responded in this way to a teacher's request to pilot the program:

No mention is made of hands-on manipulatives which are so important to the mathematics program, in particular to the areas of algebra and ratios. . . . For the above reasons, it is my opinion that a pilot of this program through the Curriculum Department would not be in keeping with the instructional direction we are undertaking at this time. (Chamberlain, personal communication, 1990)

The fact that it was an effective teaching tool was irrelevant. The district would not allow the program to be tried in even one classroom.

The practice of relying on dogma is not confined to mathematics instruction. A second example comes

from the California State Board of Education's mandated "best method" for language arts in first grade—the teaching of reading, in particular. In 1988, the State Board of California issued a document spelling out the characteristics mandated for beginning reading programs. "Research" for this method was based primarily on opinion rather than data. A review of scientific research related to this mandated method for teaching beginning reading in first grade found no research support for the mandate (Stahl & Miller, 1989), which is affecting the instruction that thousands of students receive in California and around the U.S.

Unfortunately, some educational leaders are not content to ignore research; they actively discourage it. A California law requires that before instructional materials are adopted, they must be tried out with students and then be revised, based on problems the students had. The California State Board of Education in 1988 explicitly refused to comply with this law, stating that the 1976 law ". . . is not to be considered as part of the criteria for recommending materials to the State Board of Education" (California State Board of Education, 1988, p. 15). For explicitly ignoring the 1976 law and for other reasons, a judge ruled that the State Board's procedure allowing untested curricular methods to be adopted was illegal (Long, 1989).

An incident reported by the noted physicist Richard Feynman (1985), when he served on a commission of the California State Board of Education to evaluate textbooks, illustrates the pervasiveness of dogma in education. A math textbook with only blank pages was sent to the commission members. Six of the 10 members actually gave the book a rating of "above average," even though all the pages were blank.

Advocating Effective Practices

The remedy for dogma is not to advocate yet another new and different solution, but to insist that all proposed solutions be evaluated. Evaluating educational approaches (i.e., tools) is more difficult and contentious than evaluating students. However, these difficulties should not be used as excuses for abandoning the effort. As the population of

U.S. students becomes more diverse, the need for proven instructional tools becomes even more critical.

If teachers are to be held accountable, then the educational establishment must be held accountable for providing relevant knowledge and the viable professional tools derived from that knowledge. Overlooking the failure of educational leaders to provide these tools continues to undermine large-scale reform efforts.

A major thrust of educational reform should target those responsible for providing tools to teachers. Some specific target organizations and groups include (a) state textbook adoption committees, (b) national curriculum organizations, (c) superintendents, (d) educational publishers, (e) teacher and administrator certification programs, and (f) educational researchers. These stakeholders are virtually ignored as targets in school reform efforts. They continue to operate with impunity and in no way are accountable for their pronouncements and mandates (i.e., there is no accountability and no quality control). How can those responsible for developing and disseminating a professional knowledge base be made accountable? Clearly, this is the central question. The following suggestions (Carnine, 1991) regarding these target groups are only preliminary, a departure point for a concrete, plausible, and effective agenda for professionalizing educational leaders.

1. In some states, textbook adoption agencies have the responsibility of ensuring that teachers in an entire state receive tools reflecting standards of decency, accuracy, and effectiveness. Although these agencies were created to protect the public, their actual utility is questionable. As indicated earlier, they traditionally have not judged programs from objective standards of how well programs have worked with students, but instead have relied on expert "opinion" and dogma. One suggestion is simply to eliminate state adoption agencies and let local districts make their own decisions; this is currently the case in about 30 of the 50 states.

2. National curriculum organizations aggressively promote content, instructional assessment, certification, and staff development standards for

each discipline. For example, the NCTM hired a public relations firm and spent hundreds of thousands of dollars to promote the new standards. As illustrated earlier, these organizations often make instructional decisions based on the prevailing dogma. One possible course of action is for teachers to band together with other concerned advocacy groups (e.g., The Business Roundtable, Children's Defense Fund, American Psychological Association, The Association for Behavior Analysis, Mexican American Legal Defense Fund, NAACP, etc.) to determine the extent to which standards for teaching are research driven according to student outcomes. This scrutiny might make school districts more hesitant to adopt unproven methods.

3. Superintendents are responsible for helping set and implement the priorities for a district. The processes they use to make decisions about teaching and learning set a model for other educational leaders in the school district. Unfortunately, in large districts, superintendents tend to have little time or energy for instructional issues.

A possible course of action for making all superintendents more accountable for teaching and learning is to have school boards require that superintendents take a vow to endorse or mandate a new program only after it has been tried out on a small scale in the district or it has been systematically evaluated elsewhere. To help educational leaders hold to this vow, teachers' organizations, parents, school board members, and community leaders should respond to all instructional reform suggestions with this question: "How do you know it will work?" If the answer is, "I read about it in a journal," or "I heard about it from a colleague," respond in this way: "Tell me about the research, but no jargon, please." Some sample questions to ask include (a) Was the research valid, that is, were the students involved in the reform comparable to a control group who received traditional instruction? (b) Does the instructional reform have consistently positive effects? (c) Will its results lead to a substantial improvement over our current practices? (d) Was the research conducted with students similar to the students who will receive it here? (e) Were the measures appropriate?

The next questions have to do with training and monitoring. An approach may work in the hands of an exceptional teacher, but may not be something an average teacher is able to implement. Here are possible questions: (a) What are the procedures to ensure that teachers will receive adequate training to implement the approach? (b) How will teachers and students be monitored to ensure the students are succeeding?

4. Educational publishers produce and sell most of the tools used by educators. Textbooks are designed to be complete in their coverage of the discipline and to be attractive to teachers. One marketing survey found the single most important characteristic in the purchase of math textbooks was the attractiveness of the art. Basic textbooks used in the elementary schools are not field-tested and revised according to their effectiveness with students. In almost every case, the textbooks are not written by people who were trained as educators or who have worked as teachers.

However, publishers are extremely responsive to the marketplace. When a substantial number of educators begin purchasing instructional material based on effectiveness, publishers are likely to adapt and textbooks will incorporate more effective practices. It is possible that no particular action is needed for publishers, given the assumption that they will incorporate reforms endorsed by the educational establishment. Those endorsements will have to be perceived as serious and long lasting; publishers have to respond to many special interest groups and, because of the 20 to 40 million dollars required to develop and market a basic textbook series, they are quite reluctant to make major changes.

5. Teacher certification programs control who will be allowed to teach. Colleges of education have not been particularly successful in preparing teachers to work effectively with a wide spectrum of students, especially those students who are at risk. One possible reason is that the faculty in the colleges of education are often oblivious to the consequences of the methods they advocate.

The monopoly held by college certification programs on preparing teachers makes reform extreme-

ly difficult. One possible course of action is to establish a national advisory board with representatives from mature professions, such as medicine, engineering, and law. The charge of the board would be to review the certification process for teachers and make recommendations for improvements. Pilot programs could also be explored (e.g., closing some colleges of education and transferring the resources to exemplary school districts, which would assume responsibility for certifying teachers following the "teaching hospital" concept, with prospective teachers working with many groups of students over a period of several years, as do residents in a hospital).

6. Educational researchers are responsible for producing most of the scientific knowledge that can serve as a basis for the development of professional tools for educators. The areas of inquiry that interest researchers are often irrelevant to making informed decisions about effective practices. For example, huge educational movements (such as whole language, in which students are to learn to read and write in a natural fashion just as they learned to talk) affect literally millions of students, yet they are largely ignored by researchers. Schools attempting to implement whole language, the NCTM standards, or other new approaches need to know there are agencies that can provide them with timely guidance, and that those same agencies are vitally interested in the outcomes of those schools' efforts and are ready and eager to share that information with other schools.

One possible course of action is to coordinate research funding with relevant trends in education, collaborating with school districts to evaluate new ideas on a small scale *before* the idea is mandated for millions of students. More specifically, structures already exist in the U.S. Department of Education—the Educational Centers and the Regional Educational Laboratories—that could be tapped to assist these interchanges: to share information and provide necessary support to states, districts, and schools in the evaluation of new approaches. Because the educational laboratories are regional, they could work collaboratively with school districts in the region to conduct longitudinal studies on

emerging educational materials and practices, even when they are being implemented on a relatively small scale. This is comparable to the evaluations the FDA requires. The findings from these studies would be invaluable to help other districts determine the benefits and pitfalls of various new approaches and would reduce the amount of time and resources spent pursuing approaches with limited, or even counterproductive, potential. Adjusting the scope of work of the regional labs and the centers funded by the U.S. Department of Education could lead to the kinds of information teachers need and deserve. Moreover, the public and the nation require such information to realize the bold visions being put forth (e.g., acquiring higher-order thinking, reasoning, and communication skills, as envisioned in the NCTM standards, and to accelerate math achievement for all American students, as called for in the *National Governors' Goals* and the *America 2000* objectives). Given the urgency of the current improvement efforts, we cannot afford to repeat mistakes simply because prior efforts have not been evaluated adequately and objectively. An educational version of the FDA is needed, and needed now.

Legislation is being considered by the Food and Drug Administration "... to protect consumers from health-endangering diet plans promoted by misleading and deceptive ads that are a scam on the American public" (Hellmich & Sperling, 1990, p. 1A). Even the spotted owl benefited from mandated environmental impact studies. Yet no one is even discussing true protection for American students from fads that could endanger thinking.

Conclusion

Great amounts of money have been spent on research for better ways to teach—research that is largely ignored. Almost no money is spent to monitor the efficacy of what is endorsed and mandated. Policymakers have erroneously assumed that finding out what works will automatically displace what doesn't work. This assumption is no more true than assuming that research findings concerning the benefits of not smoking, alone, will lead to a reduction in teenage smoking.

In the late 1960s, I participated in the largest educational experiment ever conducted to improve the academic, affective, and health status of economically disadvantaged primary-grade students. Just collecting and analyzing the data cost \$60 million (Abt Associates, 1977). As part of that research, developers of various approaches, including earlier versions of whole language and constructivist math approaches, worked with schools across the U.S. An average of more than \$1,500 (of today's dollars) was added every year for every student in every classroom to cover additional teachers, materials, staff development, liaison with parents, and so forth. At the end of third grade, with all the additional money and services, the students in the 1960s versions of whole language and constructivist math approaches scored no better and often worse than control students on both academic and affective measures. In contrast, some approaches had dramatic positive effects. There were technical flaws in the research, yet variations of the failed approaches are now being encouraged or mandated for literally millions of students with little research and no independent evaluations whatsoever.

The economic and social problems the U.S. faces as we begin the 1990s place the public schools at great risk (Davidson & Rees-Mogg, 1991): "It is more likely than most people now imagine that public schools in the United States will more or less disappear in the coming decade" (p. 426). The call for improvement (not just change) is colliding with increasing student diversity and dwindling resources. Compromise is called for—educators must take responsibility for improving practice, and the public must provide the resources. Good faith efforts must be made on both sides. As one Oregon State Board member said, "Do business in a different way." But educators champion "better" ways, not just "different" ways.

A continued reliance on dogma, rather than on a scientific perspective, will make these improvements far more difficult. Dogma-driven approaches are not likely to bring about the results the public is demanding, thus pushing public education toward the at-risk designation. All professionals de-

serve and require access to workable, effective tools. Teachers are no exception. Such tools, in conjunction with adequate resources, represent one part of the solution to reforming education and saving the public schools.

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